Adriatic sea water. Winkler probably had less decaying organic matter in his samples than were present in mine, as he makes no mention of difficulty on account of the presence of colloid material.

A sample of water which I dipped up from the Saltair pier, in the Great Salt Lake, Utah, contained only 40 per cent. more iodine than in sea water although the chlorine concentration was about 500 per cent. greater than in sea water. Since the Great Salt Lake is the residue left from the evaporation of Lake Bonneville, which was 1,000 feet deeper than the Great Salt Lake, and received practically all of the drainage of the Great Basin, covering Utah and parts of neighboring states, we have here a demonstration of the small quantities of iodine that are given up in the weathering of both igneous and sedimentary rocks.

Practically all of the iodine of the earth's surface is in the sea, which contains about sixty billion metric tons of iodine in the form of inorganic salts. This iodine probably entered the sea at the time chlorine accumulated in it. Iodides were probably the most soluble salts on the earth's surface, chlorides being next in solubility. If the earth was once hot on the surface, it is probable that hydriodic acid existed in the atmosphere and was washed into the sea with the first rain. Insoluble iodides of heavy metals are considered by Emmons to be secondary formations, due to the seepage of sea water through ores.

Judging by the prevalence of goitre, there is often a deficiency of iodine in our food and drink. At present, so little is known about the exact quantities of iodine taken into our stomachs that we can judge only by the number of cases of goitre. Omitting the details of local distribution of goitre, there is a wide goitre belt extending north along the Appalachian mountains to Vermont, thence west through the Great Lakes region to Montana and Washington and turning south it finally includes all of the Rocky Mountain and Pacific states. In fact, the goiterous belt includes the mountainous and glaciated regions. Since the run-off from mountainous and glaciated regions has carried away so much of the soluble material, it seems likely for this reason in addition to other evidence that the goitre belt is a low iodide belt.

Since the goiter belt includes large cities and millions of population, it seems unlikely at present that all of its inhabitants will receive iodide medication in pure form. Since the sea contains the bulk of the supply, the transfer of iodine from the sea to our food or drink should be increased. Perhaps the most attractive method is the inclusion of sea-foods in our diet, but this is limited. Dr. Turrentine of the Kelp-Potash Plant at Summerland, Cal., informs me that powdered kelp, when added in small amount to food can not be tasted and when added in larger amount imparts a pleasing taste to it. Since it is richer in iodine than ordinary sea-food and is relatively abundant, it should be an important source of iodine in our diet. Since sea water and salt-deposits contain iodine, salt might be made an important source of iodine in our dietary scheme. Blood and shell fish are about the only foods that do not require the addition of salt to make them palatable and fill our physiological needs, and hence the presence of iodine in salt would insure its universal consumption. Mr. O. S. Rask and myself failed to find iodine in any one of a number of samples of salt examined. Salt could easily be prepared from sea water as described above with the retention of the iodine compounds and at a cost not exceeding that of present-day table salt. Some of the magnesium carbonate precipitated from it could be added later if it be desired to make a shaker-salt, but from a nutritive standpoint, the addition of calcium phosphate for this purpose is highly desirable.

J. F. McCLENDON
UNIVERSITY OF MINNESOTA

INTERNATIONAL MEETING OF CHEMISTS AT UTRECHT

AT Utrecht on June 21 to 23, there was held the first gathering at which chemists from Germany and Austria have met with chemists from England, America and other countries for the presentation and discussion of scientific papers. The following persons were present: America: L. M. Dennis, D. A. MacInnes, W. A. Noyes.

Austria: E. Abel, J. Billiter, F. Emich, A. Kailan, A. Klemenc, F. Pregl, A. Skrabal, R. Wegscheider. Czecho-Slovakia: J. V. Dubsky, A. Simek. Denmark: N. Bjerrum, J. N. Brönsted, J. Petersen, Chr. Winther. England: E. C. C. Baly, F. G. Donnan, W. C. McC. Lewis. Germany: M. Bodenstein, G. Bredig, O. Hahn, P. Pfeiffer, R. Schenck, W. Schlenk, A. Stock, P. Walden, H. Wieland. Holland: J. Backer, J. J. Blanksma, Ernst Cohen, A. F. Holleman, F. M. Jaeger, H. R. Kruyt, W. Reindeers, P. van Romburg. Latvia: M. Centnerschwer. Russia: N. Schilow. Switzerland: J. Piccard.

The original suggestion of the meeting was made by Professor Donnan of London and preliminary plans were made at a meeting in the home of Professor Cohen of Utrecht in June, 1921. The details were carried out by Professor Cohen.

The following scientific papers were read and discussed:

E. C. C. Baly (Liverpool): Photochemical Catalysis.

P. Walden (Rostock): Ueber freie Radicale.

W. A. Noyes (Urbana): Positive and Negative Valences.

W. Schlenk (Berlin): Beiträge zur Chemie der freien Radikale und über den wechselnden Affinitätswerth der Kohlnstoffverbindung.

M. Bodenstein (Hanover): Die photochemische Bildung von Phosgen.

L. M. Dennis (Ithaca): The Preparation and Properties of Metallic Germanium.

H. Wieland (Freiburg i. B.): Ueber freie Radicale.

N. Schilow (Moscow): Vertheilungs-gleichgewichte.

J. Piccard (Lausanne): Absorptionsfarben zweiter Ordnung.

E. Abel (Vienna): Ueber direkte und indirekte Esterbildung in absolutem und wasserhaltigem Glyzerin (Nach Versuchen von Karl Heidrich).

A. Klemenc (Vienna): Dampfdrucke isomerer Benzolabkömmlinge.

M. Centnerschwer (Riga): Vorschlag zur Einführung einer kleinen Masseneinheit (Radion).

At a reception in Hotel Pays-Bas, Wednesday afternoon, there were addresses of welcome by G. L. Voernman, president of the Chemical Society of Holland, by Professor Went, president of the Royal Academy of Science of Amsterdam, and a response by W. A. Noyes, of Urbana.

The delegates were royally entertained at luncheon and at dinner each day, and on Friday there were tea and a reception given by Count van Sanderburg in his palace.

The gathering was not only for the purpose of promoting the development of chemistry through the discussion of topics of common interest by men from widely separated countries, but it was also a frank attempt to renew old friendships and form new ones between men of nations recently at war. Expression of a desire to promote permanent peace met with a hearty response.

RESPONSE BY W. A. NOYES, UTRECHT, JUNE 22, 1922

It is a great pleasure to be present at this international meeting in Holland. Last year you sent to us in America a fine representative in the person of Professor Cohen. When he was at our university in Urbana, we not only listened with great interest to the account he gave of the fine scientific work which he is doing in the van't Hoff Laboratory but we were also glad to hear of the scientific and intellectual life of your universities. We were particularly impressed by a statement he made to us about the Nobel prizes. You have here some five million people—some one says six million—I do not know very accurately—but he told us that you have received in Holland five Nobel prizes for scientific work. We in America have somewhat more than a hundred million people and we have received two prizes for such work. I am sure no other country can show such a record as Holland of nearly one prize for each million of her inhabitants. Professor Cohen also told us a part of the secret of your unparalleled work in science. He said that it is written in the fundamental laws of your state that the universities are founded to train men for the service of the state and also to train them in the methods of research. You have reason to be very proud of the way in which the spirit of your law has been carried out.

We are here for serious scientific discussions but there is another thought very much in the minds of every one. For the first time there

is gathered here an international group of chemists from nations that were on opposite sides during the great war.

On my last day on the other side of the Atlantic I spent a few hours in Quebec. There, many years ago, two great generals fought each other on the Plains of Abraham. Those generals both died in the battle and there on the front of the Parliament House I saw the statues of Wolfe and of Montcalm standing side by side. In that Parliament House meet the representatives of a nation part of whose people still speak French and part of whom speak English. Those two statues are, to me, prophetic of that which must come if Europe will not destroy herself. We are learning during these days the help which comes from talking over our scientific problems together. There is almost no limit to the advances which the world may make if nations can be willing to live together at peace. I have a great hope that states will learn those same lessons of the value of international cooperation and helpfulness that scientific men learned long ago. Let us hope that our meeting may contribute a little toward that end as well as do something for the advance of chemistry.

SCIENTIFIC EVENTS

THE ROYAL SANITARY INSTITUTE

THE *British Medical Journal* reports that the thirty-third congress of the Royal Sanitary Institute, which was held at Bournemouth from July 24 to 29, was attended by some 500 persons, including delegates from the British dominions and colonies and from many foreign countries, as well as by representatives of government departments, county and town councils, and other public bodies. The president of the congress was Major General J. E. B. Seely, M.P., who in his presidential address protested against economies at the expense of the public health, and said that the three very important principles which lay at the basis of the congress were, first, the vital necessity of the health of the people to the maintenance of the British Empire; second, that national health required the organization of all the various agencies; and third, that the health policy of the nation should not be merely the prevention of disease and premature death, but the increase in human capacity and happiness. Great advances had been made in the provision of cleaner towns, better sanitation, good water supplies, food control, drainage and sewerage, but not enough had been done for the education of the people in a healthy way of life. The housing problem could be solved only by steady and persistent work in every district over a number of years. Curtailment in the school medical service had been spoken of in the interests of economy, but he considered that that service was not only saving the lives of hundreds of children, but was laying the foundation for a healthy nation in years to come. Meetings for the reading and discussion of papers were held in five sections: Sanitary Science, Engineering and Architecture, Maternity and Child Welfare, including School Hygiene, Personal and Domestic Hygiene, and Industrial Hygiene. In the Section of Sanitary Science a discussion was held on methods of securing continuous treatment of persons infected with venereal diseases, in which papers were read by Dr. J. Johnstone Jervis, Dr. W. E. Facey, Mr. Kenneth Walker, and Dr. Joseph Cates. In the Section of Maternity and Child Welfare including School Hygiene, papers were read by Dr. John Robertson on the regulation of the distribution of milk and food at maternity and child welfare centers, and by Dr. D. C. Kirkhope on certain preventive and curative aspects of the school medical service. Papers were also read on different aspects of maternity welfare by Mr. Aleck W. Bourne, Dr. R. Veitch Clark, and Dr. R. J. Maule Horne. In addition to the meetings of the sections, a number of conferences were held of sectional representatives, such as sanitary authorities, medical officers of health, engineers and surveyors, veterinary inspectors, sanitary inspectors and health visitors. The popular lecture, on "The value of clean fresh air," was delivered by Professor Leonard Hill, F.R.S., who said that physiologists could help greatly to point the way to a happy and healthy life, but ignorance and custom enveloped the people, and it was problematical whether our civilization might not stifle itself like older civilizations and die out. The discipline and the laws